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December 27, 2005

VIA HAND DELIVERY

Board of Zoning Adjustments
441 4th Street, N.W.
Suite 210 South
Washington, DC 20001

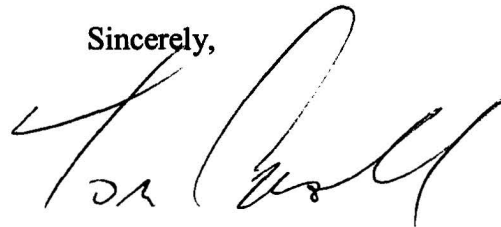
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Re: BZA Case No. 17309 – Dorchester Associates/Chain Bridge Road

Dear Members of the Board:

Enclosed please find 21 copies of a supplement to the Applicants' Revised Prehearing Statement for BZA Case No. 17309 filed on December 23, 2005.

Sincerely,



Thomas J. Carroll

Encl.

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BOARD OF ZONING ADJUSTMENT
District of Columbia

CASE NO. 17309
EXHIBIT NO. 76

Board of Zoning Adjustment
District of Columbia
CASE NO. 17309
EXHIBIT NO. 76

Tree Preservation Plan for the Chain Bridge Road Project

August 16, 2005

**RECEIVED
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2005 DEC 27 PM 4: 43**

**Bonifant Tree Service, Inc.
16300 Oak Hill Rd.
Silver Spring, MD 20905
301-942-7890**

Prepared by:

**Tom Bonifant;
Owner, Bonifant Tree Service, Inc
MD Licensed Tree Expert #090**

**Dan Ropel;
ISA Certified Arborist #MA-4100A
MD Licensed Tree Expert #885**

Bonifant Tree Service Inc. has visited the Chain Bridge Road Project to provide plans for tree preservation on the proposed development site. Tree location and ratings are based on the report completed by consulting arborist Lew Bloch. Most of the trees on the site, with proper protection, can be preserved throughout the construction process. With proper care these trees can also provide years of shade for the homeowners once the project is completed. Several aspects of the tree itself are taken into account when developing a tree preservation plan. Other aspects considered are the ways that the construction process harms the trees. To save the many trees present on the site several different methods of preservation will be employed.

There are many factors involved in determining what is needed to preserve a tree. To begin, a survey of all trees on the site needs to be completed detailing the species, size, condition and location of each tree. This survey was completed by Lew Bloch and submitted in a previous report. After a visit to the site we re-measured each tree including not only the circumference but also the diameter of the trees at breast height (dbh) and the radius of the drip-line. These measurements are used in determining the protected root zone of each tree. The protected root zone can be defined as 1' radius for each inch diameter dbh of the tree (Arlington County Dept of Public Works). Another method for determining the protected root zone is by using the drip line of a tree (University of Minnesota Extension Service). Topography of the land and other trees in the vicinity can also factor into the root zone of a tree. For example, a greater number of roots may be present on one side of the tree due to competing trees on the opposite side. It should also be noted that trees fenced in groups are more likely to survive than an individual fenced tree. Another issue to consider when protecting these trees is tolerance of each species to disturbances. Generally, no more than 25% to 30% of a trees root system should be damaged during construction; however a young tree of a tolerant species may withstand as much as 50% root loss or more. To provide adequate protection of the trees on this site a combination of methods will be used to protect the trees.

Construction can damage trees in many ways. Machinery hitting trees is one of the frequent ways that damage occurs. This causes open wounds that are more susceptible to insects and disease. Some of the things that may not be as obvious is the damage that happens below grade. This includes the cutting of roots during excavation and the smothering of roots when soil is added to the existing grade. Soil compaction from machines as well as foot traffic can damage roots as well as the soil structure, hindering future root expansion. Other factors include the alteration of water flow in the area of the tree and chemical spills or dumping within the tree's root zone. The tree preservation plan is developed to minimize the impact from all of these factors.

Several methods of preservation will be used to minimize the effects of the construction. The most visual device will be the installation of tree protection fences. These fences will be installed to section off a "NO ENTRY" area around the critical root zone of the protected trees. Fencing will consist of, at minimum, 14 gauge wire, 4' high attached to post no greater than 10' apart on center. No construction materials, personnel

or equipment will be allowed in these areas during the construction. This also prohibits grade changes within the fenced perimeters. For trees very close to houses, the fence will be installed as described and then may be moved to allow personnel to complete the finishing aspects of the building at the end of the construction process. No machinery will be allowed in this area even after the fence has been moved. To prevent compaction in this area, a 6" – 8" layer of woodchips will be spread over the root zone. Root pruning will be done at the edge of the excavation areas to provide a clean cut on the roots encouraging future root growth. Proper pruning of the tree canopies will also be completed as needed to minimize or eliminate damage during the construction operations. Construction methods or house design will need to be altered in some cases to minimize root disturbance. An example of this is placing the house foundation on piers. Underground utilities will need to be tunneled underneath the root system of trees where they pass through the tree protection areas. Supplemental watering or other necessary steps will be taken to maintain tree health if dry weather or a drought occurs immediately preceding or during the construction. These precautions have proven successful for many development projects.

After the construction has been completed several steps will be taken to reduce post construction stress. Aeration of the root system of all trees will be done to help alleviate any compaction that may have occurred during or previous to the construction. Root zone aeration consists of drilling 2" holes on three foot centers throughout the protected root zone. The resulting holes are backfilled with a porous material such as composted leaf litter. Supplemental watering will help the trees overcome the stress induced during the construction. Soil tests will be conducted to determine if fertilization is needed to maintain tree health. As always care by the new homeowner will play an important role in the long term sustainability of these trees.

It appears that the layout of the development takes advantage of the existing topography by building the majority of the houses in the flat areas. This is beneficial because the majority of the trees are located on the steeper slopes. With this layout the trees will be able to be fenced together in large groups, increasing their long term viability.

Details of methods for preservation of individual large trees:

#1 Pin Oak: 91" Circumference, 28' Drip Line.

Tree does not appear to be on the property.

#2 White Pine: 60" Circumference, 13' Drip Line.

Fencing for this tree will join the fence of nearby trees. Fence will be installed at 13' or as limited by the existing tennis court on the neighboring property. Okay if patio for lot h is excavated very carefully.

#3 Pin Oak: 110" Circumference, ~40' Drip Line.

Cankers present at the base of the tree and large deadwood is present throughout the canopy. The decline of this tree is likely a result of the installation of the existing sidewalks located close to either side of the trunk. This tree is not in good health and will likely not survive with or without construction. Removal of this tree is recommended due to threat to adjoining property.

#4 American Elm: 99" Circumference, 35' Drip Line.

Fencing to be determined on the south side by house footprints then extending out to 30' on the north side of the tree. The rear most room in the house on lot i will need to be placed on piers to leave a greater portion of the trees root system intact. The grade will also need to remain at the existing level to avoid damage of the root system. Recommend removal of existing tennis court on adjoining school property

#5 Unhealthy flowering Cherry to be removed.

#6 Pin Oak: 114" Circumference, 30' Drip Line.

Tree is located ~16' from existing driveway. Fencing to be placed at driveway edge on the south side and extending out to 30' on the north side with an allowance for the corner of the house on lot i.

#7 Pin Oak: 87" Circumference, 40' Drip Line.

Fencing for this tree will join the fence for nearby trees, from the roadway on the south side to the house on the north side. The rearmost room of the house on lot 1 should be set on piers or have the southernmost wall moved to the north by several feet.

#8 Red Oak: 51" Circumference, ~22' Drip Line.

Fencing for this tree will join the fence of nearby trees and installed no closer than 20' from the trunk of this tree.

#9 Red Oak: 77" Circumference, 1' – 35' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend to the parking area for lot 4 on the south side and extends to the house edge on the north side. The raised patio shown on the plan for the house on lot 2 will need to be changed to a structure that does not require a continuous foundation if this tree is expected to survive. A structure such as a deck will disturb far fewer roots allowing this tree to survive. The fencing will remain in place during the construction of the house and will be moved afterwards for the construction of a deck, following the precautions described above.

#10 Red Oak: 87" Circumference, 23' Drip Line.

This tree has a healthy appearing canopy although cankers are seen at the base. It should be noted that there is no root flare, indicating grade level has been raised around the trunk and a portion of the root system. Fencing for this tree will join the fence of nearby trees. It will extend from the back of the house located on lot 2 on the north side down the hill to the edge of the parking area to the south located on lot 4.

#11 Red Oak: 117" Circumference, 25' Drip Line.

Fencing for this tree will join the fence of nearby trees. Fence will extend close to the house on lot 2 on the north side and down the hill on the south side to a minimum of 25'. Move garage to the West ~10' to minimize impact on this tree.

#12 Tulip Poplar: 124" Circumference, Drip Line was not measured.

Removal of this tree is recommended. Severely damaged in storm July 2005, compromised structural integrity and threatens Chain Bridge Road.

#13 Beech: 41" Circumference, 16' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend 15' to the east of the trunk, south to the road edge and north up close to the front of the house located on lot 4. Portion of basement closest to #13 (lot 4) should be eliminated.

#14 Beech: 41" Circumference, 16' Drip Line.

This tree is rated 45% on the original tree survey. It is recommended that this tree be removed to allow for the relocation of the driveway of lot 4 to move closer to Chain Bridge Road. This will allow greater root space for trees #15 and #16.

#15 Beech: 56" Circumference, 13' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend from the road edge to the edge of the relocated (closer to Chain Bridge Road) driveway of lot 4. Portion of basement closest to #15 (lot 4) should be eliminated.

#16 Beech: 48" Circumference, 7' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend from the road edge to the edge of the relocated (closer to Chain Bridge Road) driveway of lot 4.

#17 Beech: 61" Circumference, 18' Drip Line.

Fencing for this tree will join the fence of nearby trees to the north and extend to the road on the south.

#18 Red Maple to be removed for construction.

#19 Beech: 54" Circumference, 20' Drip Line.

Fencing for this tree will join the fence of nearby trees to the north and extend to road on the south.

#20 Black Cherry: 126" Circumference, 30' Drip Line.

The condition of this tree appears to have degraded since the original tree survey was completed. Multiple areas of decay are present in the main trunk and limbs. There is also a large amount of deadwood present within the canopy. Removal of this tree is recommended due to its poor condition. Hazardous for any construction.

#21 Black Cherry: 49" Circumference, 20' Drip Line.

Fencing for this tree will join the fence of nearby tree #22. Fence will be installed at a radius of 20'.

#22 Boxelder: 64" Circumference, 35' Drip Line.

Fencing for this tree will join the fence of nearby tree #21. Fence will be installed at a radius of 23'.

#23 Tulip Poplar: 74" Circumference, 25' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend from the edge of Chain Bridge Rd. on the east out to a radius no less than 25'.

#24 Tulip Poplar: 73" Circumference, 20' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend from the edge of Chain Bridge Rd. on the east to the edge of the house on the other side. Elimination of the basement on the east end of house.

#25 Tulip Poplar: 70" Circumference, 25' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend from the edge of Chain Bridge Rd. on the east to the edge of the house on the other side. Elimination of the basement on the east end of house.

#26 Tulip Poplar: 74" Circumference, 24' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend from the edge of Chain Bridge Rd. to the edge of the house on the other side. Elimination of basement on the east end of the house.

#27 Red Oak: 37" Circumference, 30' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend from the edge of the house out to a radius no less than 22'. The construction of the patio on the back of the house on lot 3 will need to take into account the root system of this tree.

#28 American Holly to be removed for construction.

#29 Red Maple: 127" Circumference, 30' Drip Line.

This tree has a rating of 50% on the original tree survey. Decay is present in the trunk of the tree and the canopy has several broken limbs throughout. Fencing for this tree will extend to the edges of the road and driveways on the west, north and east sides. To the south it will extend to the edge of the houses located on lots d and e. Constructing north end of house on piers will minimize impact on tree. No grade change in front of house.

#30 Unhealthy Red Maple to be removed. Many structural defects and hazardous for any construction.

#31 Flowering Cherry: 55" Circumference, 24' Drip Line.

This tree is rated 45% on the original tree survey. It is a mature tree nearing the end of its life expectancy. There is an existing retaining wall on the southeast side of the tree, ~5 feet from the base. It is unlikely that the roots of this tree extend past this wall; therefore the protection fence will be installed along the top of the wall. The fence will extend on the opposite side of the tree to the edge of the house on lot e. In other areas the fence will extend out to a minimum of 20'.

#32 Hemlock: 102" Circumference, multi trunk, 20' Drip Line.

This tree is rated 40% on the original tree survey. Fencing for this tree will join the fence of nearby trees. On the north it will extend to the edge of the house on lot e and extend outward to a radius no less than 20'.

#33 Hemlock: 48" Circumference, 27" 15' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend on the southwest side out to the property line and close to the house on lot d.

#34 Spruce: 48" Circumference, 15' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend on the southwest side out to the property line and close to the house on lot d.

#35 Magnolia to be removed for construction.

#36 White Pine: 81" Circumference, 15' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend on the southwest side out to the property line and close to the house on lot d.

#37 Hemlock: 56" Circumference, 15' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend on the southwest side out to the property line and close to the house on lot d.

#38 Sycamore: 89" Circumference, 20' Drip Line.

This tree apparently has declined from the time of the original tree survey. The outer edge of the canopy has dieback present. This tree is in decline and is hazardous to neighboring properties. The construction of the existing storm drain may have led to the decline of this tree. Removal of this tree is recommended.

#39 Unhealthy Tulip Poplar to be removed. Hazardous to neighboring properties.

#40 Tulip Poplar: 121" Circumference, 30' Drip Line.

As seen in existing plans, this tree is not likely to survive the construction. A redesign of the driveway and alternative building methods such as supporting the house on piers will give this tree a much better success rate. Fencing for this tree will extend from the edge of the house on lot a, to the edge of a redesigned driveway, south to Chain Bridge Rd. and west to the property line.

#41 Tulip Poplar: 102" Circumference, 34' Drip Line.

This tree has a rating of 40% on the original tree survey. There are several major defects present. This tree is hazardous and should be removed before construction begins.

#42 White Oak: 42" Circumference, 34" Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend from the edge of house on lot b to the north and outward 30' and to Chain Bridge Rd. Alternative building methods for the construction of the garage of the house on lot b will further increase the long term viability of this tree.

#43 White Oak: 44" Circumference, 22' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend from the edge of house on lot b to the north and outward 30' and to Chain Bridge Rd. Alternative building methods for the construction of the garage of the house on lot b will further increase the long term viability of this tree.

- #44 Beech: 87" Circumference, 35' Drip Line.**
Fencing for this tree will join the fence of nearby trees. It will follow closely the existing roadways and outward to a minimum radius of 35'.
- #45 Beech: 53" Circumference, 34' Drip Line.**
Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot b.
- #46 Beech: 84" Circumference, 25" 34' Drip Line.**
Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot b.
- #47 Beech: 65" Circumference, 34' Drip Line.**
Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot b. The sidewalk out to the road for lot b should either be eliminated or redesigned.
- #48 Beech: 78" Circumference, 35' Drip Line.**
Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot b. The fence on the west side of the tree will be close to the trunk to allow the construction of a driveway bridge between #48 and #49 for access to lot b. This bridge needs to be built over the top of the root system in a manor that will disturb as few roots as possible. The sidewalk out to the road for lot c should either be eliminated or redesigned.
- #49 Beech: 77" Circumference, 41' Drip Line.**
Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot c. The fence on the east side of the tree will be close to the trunk to allow the construction of a driveway bridge between #48 and #49 for access to lot b. This bridge needs to be built over the top of the root system in a manor that will disturb as few roots as possible. Moving the house on lot c several feet to the south will allow greater space for the root system of trees #49 - #53.
- #50 Beech: 66" Circumference, 37' Drip Line.**
Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot c. The sidewalk out to the road for lot c should either be eliminated or redesigned. Moving the house on lot c several feet to the south will allow greater space for the root system of trees #49 - #53.

#51 Beech: 62" Circumference, 39' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot c. The sidewalk out to the road for lot c should either be eliminated or redesigned. Moving the house on lot c several feet to the south will allow greater space for the root system of trees #49 - #53.

#52 Beech: 52" Circumference, 32' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot c. The sidewalk out to the road for lot c should either be eliminated or redesigned. Moving the house on lot c several feet to the south will allow greater space for the root system of trees #49 - #53. The fence on the west side of the tree will be close to the trunk to allow the construction of a driveway bridge between #52 and #53 for access to lot c. This bridge needs to be built over the top of the root system in a manor that will disturb as few roots as possible.

#53 Beech: 102" Circumference, 35' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will extend from roadway edge out to the edge of the house on lot c. The sidewalk out to the road for lot c should either be eliminated or redesigned. Moving the house on lot c several feet to the south will allow greater space for the root system of trees #49 - #53. The fence on the west side of the tree will be close to the trunk to allow the construction of a driveway bridge between #52 and #53 for access to lot c. This bridge needs to be built over the top of the root system in a manor that will disturb as few roots as possible.

#54 Fallen Hemlock to be removed.

#55 Unhealthy White Pine to be removed.

#56 White Pine: 54" Circumference, 15' Drip Line.

This tree has a rating of 40% on the original tree survey. This tree will be located very close to the house on lot g. Removal of this tree is recommended prior to construction.

#57 White Pine: 42" Circumference, 15' Drip Line.

This tree has a rating of 40% on the original tree survey. This tree will be located close to the house on lot g. Removal of this tree is recommended prior to construction.

#58 Hemlock: 92" Circumference, 14' Drip Line.

One lead had fallen from this tree prior to our inspection making this tree a hazard to adjacent property.

#59 Hemlock: 48" Circumference, ~10' Drip Line.

The drip line of this tree was difficult to determine due to the density of the surrounding bamboo. Fencing for this tree will join the fence of nearby trees. It will extend from the property line on the south side out to a radius of 14'.

#60 American Holly: 83" Circumference, 14' Drip Line.

The condition of this tree appears to have degraded since the original tree survey was completed. Multiple defects are present in the main trunk of the tree consisting of, but not limited to, decay and included bark.

Removal of this tree is recommended prior to construction due to threat to neighboring property.

#61 Dead White Pine to be removed.

#62 Not found on property or survey. (School property)

#63 Not found on property or survey. (School property)

#64 Tulip Poplar: 44" Circumference, 20' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will be installed at a minimum radius of 20'.

#65 Hemlock: 42" Circumference, 10' Drip Line.

Fencing for this tree will join the fence of nearby trees. It will be installed at a minimum radius of 13'.

66 36" diameter Oak

Tree is located behind the house on lot g. Fencing will be installed at a radius of 20' on the east side and extending out to 35' along the property lines. This limited fencing along the uphill side is adequate due to the fact that tree roots do not grow far along uphill slopes.

67 42" diameter Poplar:

Tree is located behind the house on lot g. Fencing will be installed at a radius of 20' on the east side and extending out to 35' along the property lines. This limited fencing along the uphill side is adequate due to the fact that tree roots do not grow far along uphill slopes.

Small trees will also be surrounded with protective fencing. Individual trees will be installed at a radius of 8' or included in the fencing of the larger trees where possible.

Even with the extensive development planned around these trees, with proper protection and care, the specified trees can remain viable long after the construction has been completed. With ample protective fencing installed prior to construction, the first and most important layer of defense is provided. Proper care during, and following, the construction process will also help to maintain the health of the trees. The methods of protection and care proposed here have proven successful at many construction projects. It will not only be up to the developer to care for the trees but the new homeowners as well. They will play an important part in the care and maintenance of the trees long after the houses have been completed.

The following properties in Takoma Park are examples of “tree preservation” that have proven successful. Bonifant Tree Service was involved in the Haverford Road and Heather Avenue properties prior to construction and the Tulip Poplar Avenue property several years after the completion of construction. Twenty years ago, Takoma Park led the way in the area of tree preservation and new construction. We have listed information on each of these properties and have included recent photographs.

1. 1103 Haverford Rd. (lot originally subdivided from 1105 Haverford Rd.)
Our first inspection was on 2/15/93. The house was staked out and the path for the utilities was marked. The construction was completed in late 1993. The photographs were taken on 6/20/05 and show that the trees are still healthy. (See attached information and four photographs).
2. 903 Heather Ave. (lot originally subdivided from 901 Heather Ave.)
Our first inspection was on 12/30/94. Excavation and construction had been started prior to our first visit. Recommendations were made to minimize the impact on the effected trees. These recommendations were followed with good results. The photographs were taken on 6/20/05 and show healthy trees.
3. 102 and 104 Tulip Ave.
During the construction of these two homes, both owners were involved in the preservation of their trees. These houses were built on piers to minimize the impact on the large trees that were very close to the footprints of the houses. The construction was completed in 1985. We have been involved in the care of their trees since the late 80's. In the last five years, 102 Tulip Ave. has lost an Oak to a lightning strike and lost a Mulberry to a wind storm. Still a successful story. (See attached Photographs).